

PSEUDOSCORPIONS FROM SOLOMON AND NEW BRITAIN *

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Pseudoscorpions of 11 species, 9 genera belonging to 6 families have been reported from Melanesian region by Dr. M. BEIER ('10, '32, '35, '40, '48) and Dr. J. C. CHAMBERLIN ('38) so far as known up to now, and among them, 8 species of 7 genera were from the Archipelagoes of Solomon and Bismarck. In the recent year, 1958, Dr. Takasi TOKIOKA has collected 27 individuals of the animal in the region of Solomon and New Britain. The present paper is based on his collections, which included 7 species, 5 genera belonging to 4 families and 4 species of them were new discovery. These are all soil-inhabitants and no Cheliferinea is included. The new species belonging to *Alcobisium* is especially noteworthy. The genus contains only one species of *A. malaccense* BEIER, 1952,** from Malacca, Malay Peninsula.

With the present small materials it is rather difficult to make any reference to their distribution, but the pseudoscorpion fauna of this area seems to have descended from Indo-Malayan ones. No pure line of Australian pseudoscorpion could be found.

I wish to express my thanks to Dr. Takasi TOKIOKA and Dr. Ryozo YOSII of the Kyoto University for their kind furnishing valuable materials, to Dr. Max BEIER of Natur Historische Museum, Wien for his kind presentation of his valuable literatures.

These species are identified as follows and preserved in the Osaka Museum of Natural History.

Suborder Chthoniinea

Family Chthoniidae

1. *Tyrannochthonius (Tyrannochthonius) beieri* sp. nov.

Suborder Neobisiinea

Family Neobisiidae

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** The writer has one specimen which was collected at Singapore by Ryozo YOSII in 1958.

2. *Alcobisium solomonense* sp. nov.
3. *Ideobisium bipectinatum* DADAY, 1897

Family Olpiidae

4. *Xenolpium (Euryolpium) tokiokai* sp. nov.
5. *Xenolpium* (s. str.) *bougainvillense* sp. nov.
6. *X.* (s. str.) sp.

Family Garypiidae

7. *Geogarypus* (s. str.) *javanus* (TULLGREN, 1905)

1. *Tyrannochthonius (Tyrannochthonius) beieri* sp. nov.

Carapace somewhat longer than broad and just constricted posteriorly; epistomal process is small and triangular. Four eyes, the anterior ones distant about one diameter of the eyes from the posterior ones, and the distance between the anterior eyes and the frontal margin about one half diameter of the eyes, the posterior is flat and no lens developed. Carapacial chaetotaxy : 4-2, 14 ; tergal chaetotaxy 4-4-4-4-4-6-6 ; sternites with about 8 marginal setae. Pedipalps smooth and slender and the fixed finger with about 17, movable finger terminally with 7 equal and well separated marginal teeth, and no secondary teeth. Disposition of the tactile setae as in the other members of the genus. The both cheliceral fingers with about 7 fairly small teeth at the distal half part; cheliceral palm with 4 setae; flagellum of simple and pinnate blades. The second coxa with 7 setae. Palpal tibia 5.0 times, femur 5.0 times, chela 5.1 times as long as broad.

Measurements (mm.) Male—Total 1. 0.79. Palps: femur, l. 0.35, b. 0.07; tibia, l. 0.13, b. 0.09; hand, l. 0.21, b. 0.10; chela, l. 0.51; finger, l. 0.31. Leg I: pars basalis, l. 0.17; b. 0.04; pars tibialis, l. 0.10, b. 0.04; tibia, l. 0.10, b. 0.03; tarsus, l. 0.11, b. 0.02. Leg. IV: pars basalis, l. 0.32, b. 0.14; pars tibialis, l. 0.21, b. 0.06; tibia, l. 0.10, b. 0.04; tarsus, l. 0.53, b. 0.03.

Holotype ♂, Honiala, Guadalcanal Is., Solomon. 21. IX. 1958. *Paratypes* 1 ♂, the same data; 1 ♂, the upper stream of the River Tantu, Guadalcanal Is. Solomon. 21. IX. 1958.

Remarks: The new species appears to be more closely related to *T. (s. str.) terribilis* (WITH, 1906) found in various places, Bismarck Archipelago, Sumatra, New Guinea and Siam, but the former is much smaller than the latter. The length of the palpal femur of the former is 0.35 mm. and 5.0 times as long as broad, the length of the hand is 0.21 mm. The length of the palpal femur of the latter is 0.45 mm. and 3.8 times as long as broad, the length of the hand is 0.30 mm. They are also distinguishable by the number of the teeth of the palpal finger.

2. *Alcobisium solomonense* sp. nov.

Small species. Carapace as long as the breadth of the posterior margin and without any transverse furrow, the frontal margin of the carapace of triangle shape, protruded medially and with a trace of epistomal process. No eyes. Carapacial chaetotaxy 4-6, 22; tergal chaetotaxy 6-8-8-8-10-10-8. Pleural membrane of the abdomen striated; all the 11 abdominal tergites undivided. Anal conus projected and with 2 dorsal setae. Fixed finger of chelicera with about 13, movable finger with 8 pointed teeth, exclusive of the basal part of the both fingers; galea is simple long seta; flagella of 5 simple blades; cheliceral palm with 5 setae, *sb* and *is* the largest; lamella of movable finger about 15 blades. Terminal lobe of maxilla with 2 setae. Pedipalps smooth and shorter than the body length; palpal femur 2.8 times as long as broad and broadest in the middle and somewhat proximal part, forming a short pedicel; tibia 1.5 times, mesial part with two articular fissures; chela 2.6 times as long as broad; palpal finger somewhat longer than the hand with pedicel; fixed finger of chela with 24 close-setting round teeth exclusive of the basal parts, the fixed one with venom apparatus and venedens, movable finger with same 18 teeth in distal half, on the tip provided with a receptor in which the venedens of the fixed finger is kept; the tactile hair *ib* situated near the center of the dorsum of the hand; *t*, *st* and *sb* in a cluster at the finger base and their areola are distant each other by one areola diameter. The femur of the forth pair of legs very broad, with the articulation line vertical to the long axis of the femur; the second tarsal segment about twice as long as the first one, subterminal setae simple. The genital area of the male fairly large and well differentiated; the accessory glands paired, with globular clusters.

Measurements (mm.) Male—Total l. 1.11. Palps: femur, l. 0.25, b. 0.09; tibia, l. 0.20, b. 0.13; hand, l. 0.19, b. 0.15; chela l. 0.39, finger l. 0.22. Female—Total l. 1.38; Palps: femur, l. 0.24, b. 0.08; tibia, l. 0.19, b. 0.11; hand, l. 0.18, b. 0.16; chela l. 0.38; finger l. 0.23.

Holotype ♂, Honiala, Guadalcanal Is., Solomon. 20. IX. 1958. *Allotype* ♀, the same data, *Paratypes* 1♂, 1♀, the same data; 3♂, 6♀, the upper stream of the River Tantu, Guadalcanal Is. Solomon. 21. IX. 1958.

Remarks: In this genus, only one species of *Alcobisium malaccense* BEIER, 1952, is known from Selangor, Malay Peninsula. The present new species much resembles *A. malaccense*, but the transverse furrow is quite absent, the pleural membrane of the abdomen is not granulated, the tactile hair *ib* situated about the center of the hand dorsum. The palpal femur is 2.8 times, tibia 1.5 times as long as broad in the present species, but the palpal femur 3.0 times, tibia 1.9 times as long as

broad in *A. malaccense*.

3. *Ideobisium bipectinatum* DADAY, 1897

Carapace narrowing anteriorly; the frontal margin of the carapace angulated in the middle part; without any epistomal process. No eyes. The movable finger of chelicera with a single galeal seta, and near the tip provided with about 5 fairly long teeth, the center of the fixed finger with 6 short teeth grow directing downward; flagella of 5 simple blades; cheliceral palm with 4 setae. Carapacial chaetotaxy 4-6, 22; tergal chaetotaxy 6-6-8-8-6-6. Pedipalps short and thick, finger also short. The tactile hair *t*, *st* and *sb* of the movable finger are in a cluster near the finger center, and separated about one areolar diameter from each other; fixed finger with 16, movable finger with 23 closely setting teeth exclusive of the finger basis; palpal trochanter without any protuberans posteriorly. Palpal femur 2.4 times as long as broad and broadest in the middle and somewhat proximal part; tibia 1.9 times, chela 2.3 times as long as broad; finger nearly equal in length to that of the hand with pedicel. The forth coxae fused on the central margin.

Measurements (mm.) Male from Rabaul—Total l. 1.11. Palps: femur, l. 0.22, b. 0.09; tibia, l. 0.21, b. 0.11; hand, l. 0.20, b. 0.16; chela, l. 0.36; finger, l. 0.20. Leg I: pars basalis, l. 0.10, b. 0.06; pars tibialis, l. 0.09, b. 0.05; tibia, l. 0.10, b. 0.04; metatarsus, l. 0.06, b. 0.03; telotarsus, l. 0.09, b. 0.03. Leg IV: femur, l. 0.22, b. 0.09; tibia, l. 0.17, b. 0.05; metatarsus, l. 0.06, b. 0.04, telotarsus, l. 0.12, b. 0.03.

New record: 1♂, on the way of Sulphur creek, Rabaul, New Britain. 9. IX. 1958.

Remarks: This species is distributed in New Guinea and Bismarck Archipelago. The measurements of this material are almost the same with the original described specimen.

4. *Xenolpium (Euryolpium) tokokai* sp. nov.

Carapace longer than broad, without transverse furrow and somewhat consticted laterally. With 4 large eyes, the anterior lens larger than the posterior ones. Carapacial chaetotaxy 4-4, 28. The frontal margin of cucullus hollowed in the middle. Tergal chaetotaxy 2-2-6-6-6-8-10-10. Tergites not divided, pleural membrane of the abdomen striated. Sternites with 8 setae. Lamella of movable finger of chelicera of 20 blades; flagella of simple 3 blades and the largest one with a few branches along the lateral side; galea somewhat large and divided into three simple branches at the base, subapical lobe of cheliceral finger simple; cheliceral palm with 5 setae. Tactile hair *et* of the fixed finger of chela on distal half of finger, *ist* on the lateral

side of the finger base and found near by *esb* and *eb*; *est* in the midpoint between *it* and *ist*; both palpal fingers with about 35 teeth. Each palpal femur dorsally with one long central tactile hair and proximally with one more, somewhat short ones; the hairs on the anterior margin of palpal femur are generally long; trochanter with conspicuous large conical hind tubercle. Palpal femur 2.7 times, tibia 2.6 times, hand 1.5 times as long as broad, palpal finger longer than broad. The length of pars tibialis of the first leg about as long as the pars tibialis, and the articulation between the two femoral segments slightly mobile; both tarsal segments of the forth legs proximally each with one somewhat long tactile seta.

Measurements (mm.) Female—Total 1. 2.38. Palps: femur, l. 0.71, b. 0.26; tibia, l. 0.74, b. 0.31; hand, l. 0.66, b. 0.44; chela l. 1.31, finger l. 0.69. Leg I: trochanter, l. 0.26, b. 0.17; femur, l. 0.25, b. 0.16; tibia, l. 0.32, b. 0.12; metatarsus, l. 0.16, b. 0.08; telotarsus, l. 0.16, b. 0.07. Leg IV: femur, l. 0.74, b. 0.28; tibia, l. 0.51, b. 0.13; metatarsus, l. 0.21, b. 0.09; telotarsus, l. 0.19, b. 0.08.

Holotype ♀, Honiala, Guadalcanal Is. Solomon. 20. IX. 1958. 1 deutonymph and 2 protonymphae, the same data.

Remarks: The present species is more closely related to *Xenolpium agniae* (REDIKORTZEV 1938) in the following points: the pars tibialis of the first leg is nearly equal to the pars basalis, and the joint between the two femoral parts slightly mobile; the seta *st* of movable finger of pedipalps situated nearer to *sb* and *b* than to *t*; and the subapical lobe of the movable cheliceral finger simple and undivided. But, in the present species the doral surface of palpal femur is provided with two conspicuous tactile hairs, and one of the tactile hairs is recognizable in the proximal part on the palpal femur. The body size is much smaller in the present species and many differences are noticed in the measurement, the carapacial and tergal chaetotaxy, the number of the teeth of palpal finger and the others.

5. *Xenolpium (Xenolpium) bougainvillense* sp. nov.

Small species. Carapace smooth and rather longer than broad, four eyes, carapacial chaetotaxy 4-2, 16; without any transverse furrow. Tergites not divided, each central tergite with four marginal setae. Cheliceral palm with 5 long setae, galea simple, subapical lobe of cheliceral finger simple, lamella of 18 blades; flagellum of 3 blades, one of which with lateral minute teeth. Pedipalps robust and each palpal femur with two dorsal tactile hairs, fixed finger of chela only with tactile hair *et* on distal half of the finger, with *it* and *ist* near the midpoint of the finger, but *ist* is somewhat more proximal than *it*; *b*, *sb* and *st* in a cluster and broadly distant from *t*; *st* and *sb* especially in clusters each growing with one areolar diam-

eter distance arranged in the same lebel. Both palpal finger with about 22 round and close-setting teeth; palpal femur 2.6 times, tibia 2.1 times, hand 1.4 times as long as broad; the length of palpal finger about as long as the hand. The length of pars tibialis of the first leg as long as the pars basalis. Basitarsus proximally with a long tactile seta; arolium simple and somewhat longer than claws.

Measurements (mm.) Male from Bouin—Total l. 1.39. Palps: femur, l. 0.36, b. 0.14; tibia, l. 0.37, b. 0.18; hand, l. 0.33, b. 0.24; chela l. 0.62; finger l. 0.33. Leg I: pars basalis, l. 0.12, b. 0.10; pars tibialis, l. 0.13, b. 0.10; tibia, l. 0.15, b. 0.07; metatarsus, l. 0.07, b. 0.04; telotarsus, l. 0.08, b. 0.03. Leg IV: pars basalis, l. 0.12, b. 0.16; pars tibialis, l. 0.30, b. 0.16; tibia, l. 0.26, b. 0.06; metatarsus, l. 0.10, b. 0.05; telotarsus, l. 0.12, b. 0.05. Female from Rabaul—Total l. 1.51. Palps: femur, l. 0.36, b. 0.14; tibia, l. 0.33, b. 0.15; hand, l. 0.33, b. 0.24; chela l. 0.61; finger l. 0.32. Leg I: pars basalis, l. 0.13, b. 0.10; pars tibialis, l. 0.14, b. 0.09; tibia, l. 0.16, b. 0.06; metatarsus, l. 0.08, b. 0.04; telotarsus, l. 0.14, b. 0.04. Leg IV: pars basalis, l. 0.13, b. 0.17; pars tibialis, l. 0.32, b. 0.17; tibia, l. 0.26, b. 0.08; metatarsus, l. 0.11, b. 0.05; telotarsus, l. 0.13, b. 0.05.

Holotype ♂, Bouin, Bougainville Is., Solomon. 16. IX. 1958. *Paratypes* 1♂, the same data; 1♂, on the way to Sulphur creek, Rabaul, New Britain. 9. IX. 1958.

Remarks: This new species resembles the previous new species in the construction of the femoral segments. But the nature of the two tactile hairs on the palpal femur is much the same as that of *Xenolpium* or *Indolpium*. But, the size of the body smaller and the podomeres of the pedipalps are also smaller than the other related species.

6. *Xenolpium (Xenolpium) sp.*

This deutonymph resembles the previous species, but the galeal seta clearly differs from that of *X. bougainvillense*, that is, the tip divided into three branchlets. This may be a nymphal stage of the female of the previous species.

Measurements (mm.) Deutonymph—Total l. 0.98. Palps: femur, l. 0.22, b. 0.10; tibia, l. 0.21, b. 0.12, hand, l. 0.19, b. 0.17; chela l. 0.38; finger l. 0.20. Leg I: pars basalis, l. 0.07, b. 0.06; pars tibialis, l. 0.09, b. 0.06; tibia, l. 0.09, b. 0.06; metatarsus, l. 0.05, b. 0.04; telotarsus, l. 0.07, b. 0.04.

1 deutonymph, on the way of Sulphur creek, Rabaul, New Britain. 9. IX. 1958.

7. *Geogarypus (Geogarypus) javanus* (TULLGREN, 1905)

Carapace and pedipalps granulated and black. Carapace somewhat longer than

broad. Cuculus with one longitudinal furrow in the middle, and the frontal margin hollowed; carapacal disc with two transverse furrows. Cheliceral palm with 5 setae, flagellum of only one seta, galea of movable finger simple and thick. Pedipalps longer than the body length, granulated especially in the femur; palpal femur 4.2 times as long as broad; the distal margin of the femur end obliquely cut, the proximal part slightly narrow and forming pedicel; tibia 2.9 times as long as broad and clearly shorter than femur; chela granulated and black coloured except the finger; chela 3.9 times as long as broad; the palpal finger longer than the hand and shorter than the femur; palpal finger with about 30 pointed teeth. Legs are fairly slender; the tibia of the forth legs 3.5 times as long as broad.

Measurements (mm.) Male from Rabaul—Total 1. 1.86. Palps: femur, l. 0.71, b. 0.17; tibia, l. 0.52, b. 0.18; hand, l. 0.47, b. 0.28; chela l. 1.09; finger l. 0.64. Leg I: pars basalis, l. 0.31, b. 0.12; pars tibialis, l. 0.18, b. 0.12; tibia, l. 0.24, b. 0.08; metatarsus, l. 0.16, b. 0.05; telotarsus, l. 0.14, b. 0.03. Leg IV; pars basalis, l. 0.53, b. 0.18; pars tibialis, l. 0.36, b. 0.10; metatarsus, l. 0.20, b. 0.07; telotarsus, l. 0.20, b. 0.05.

New record: 1♀, on the way of Sulphur creek, Rabaul, New Britain. 9. IX. 1958.

Consideration: The species was originally found in Java. *G. (G.) micronesiensis* (MORIKAWA, 1952) of Marcus Is. and *G. (G.) longidigitatus* (RAINBOW, 1897) of Polynesia are considered as the subspecies of this species. *G. (G.) j. formosanus* (BEIER, 1912) of Formosa and *G. (G.) j. audyi* (BEIER, 1942) of Malaya also belongs to this species, but *G. (G.) irrugatus* (SIMMON, 1899) is considered to belong to a quite different species.

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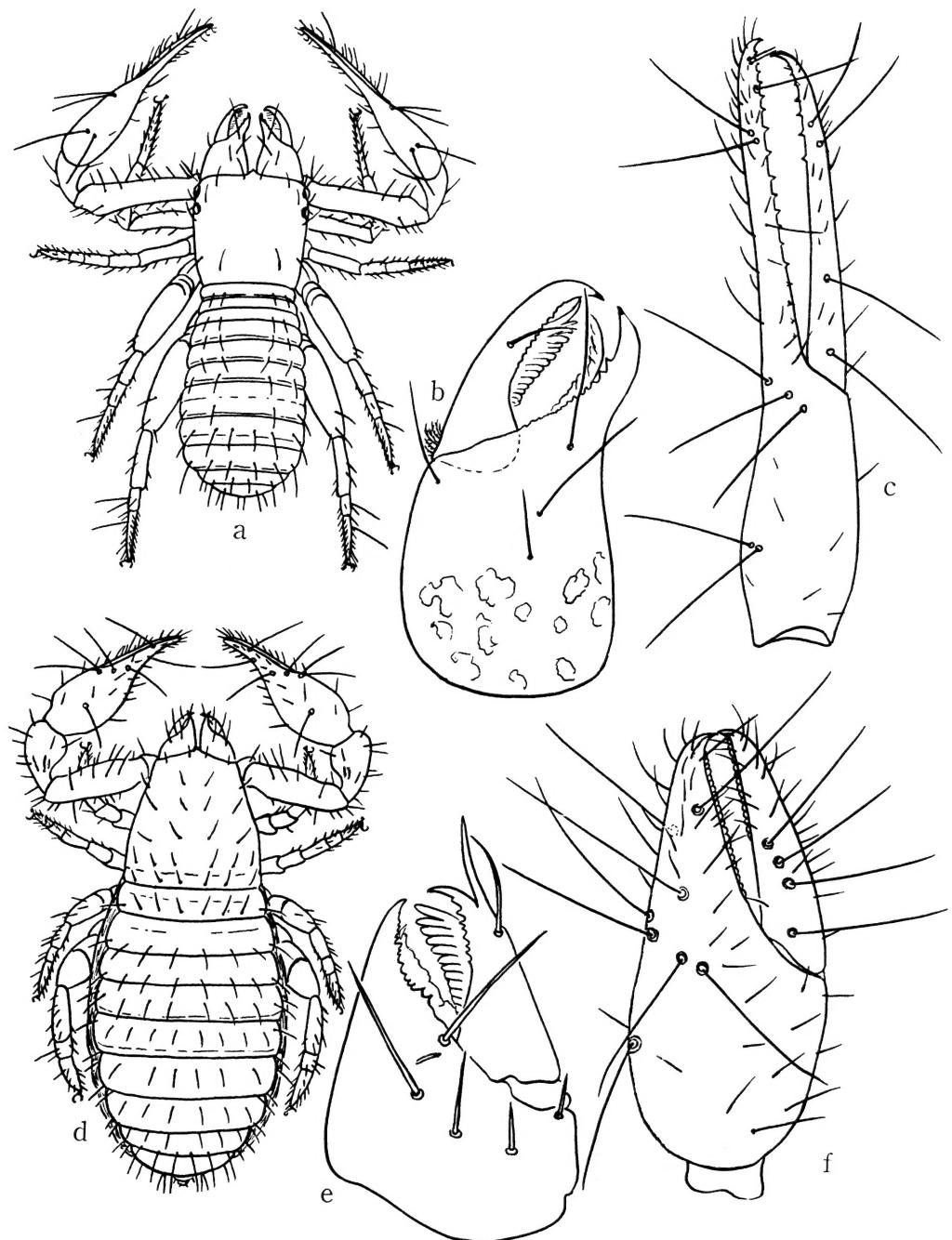
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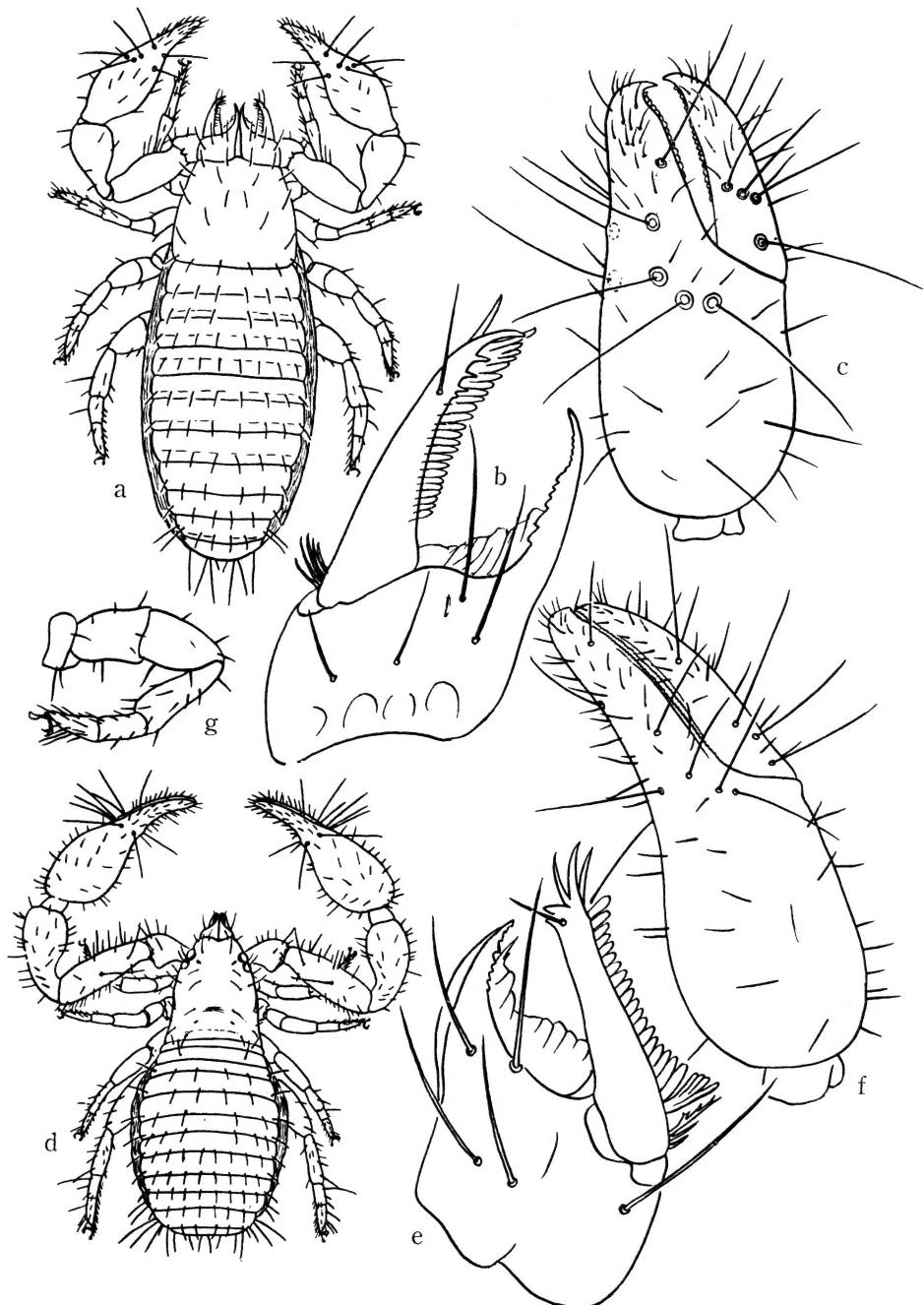
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a-c: *Tyrannochthonius (T.) beieri* sp. nov. a. General figure b. Chelicera c. Chela
d-f: *Alcobisium solomonense* sp. nov. d. General figure e. Chelicera f. Chela



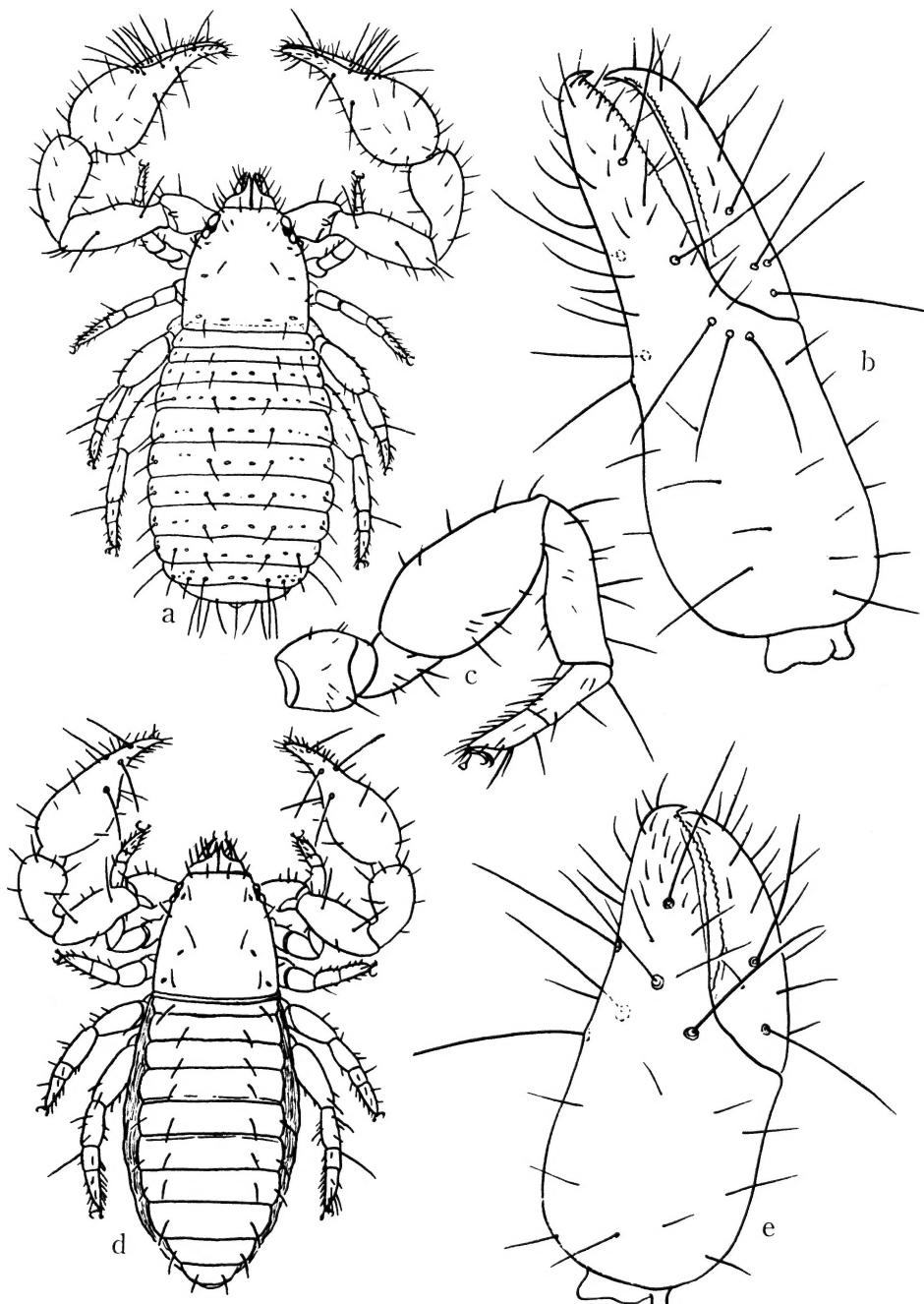
a-c: *Ideobisium bipectinatum* Daday, 1897

d-g: *Xenolpium (Euryolpium) tokiokai* sp. nov.

a. General figure b. Chelicera c. Chela

d. General figure e. Chelicera f. Chela

g. The first leg



a-b: *Xenolpium (Xenolpium) bougainvillense* sp. nov.

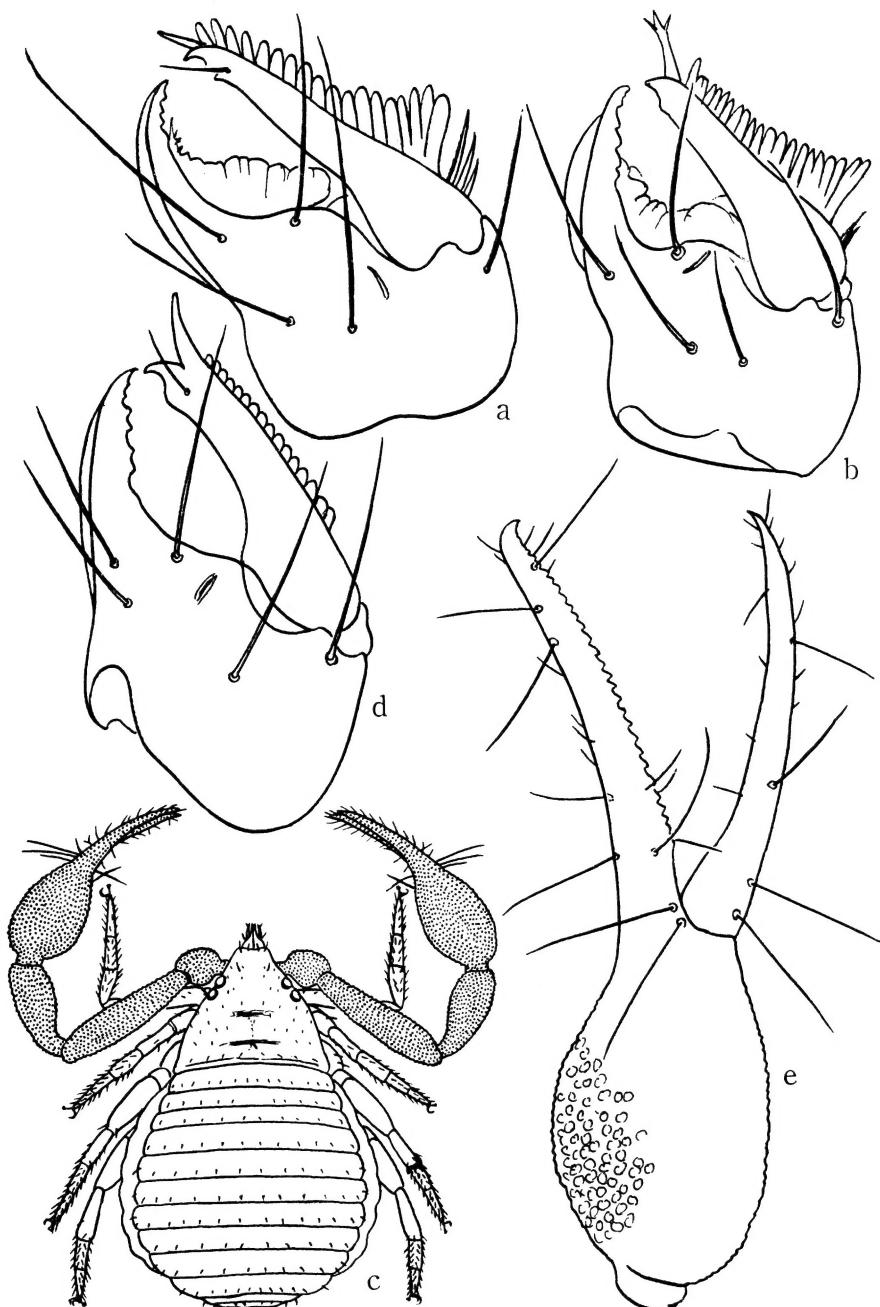
a. General figure b. Chela

c: the forth leg of *Xenolpium (Euryolpium) tokioi* sp. nov.

b. Chela

d-e : *Xenolpium (Xenolpium)* sp. deutonymph

d. General figure e. Chela



a: the chelicera of *Xenolpium (E.) tokokai* sp. nov.

b: the chelicera of *X. (X.)* sp. deutonymph

c-e: *Geogarypus (Geogarypus) javanus* (Tullgren, 1905) c. General figure d. Chelicera e. Chela